

region Metropolitan Statistical Areas: Denver, Minneapolis, Portland, Phoenix and Seattle.

These five MSAs are the largest in the Qwest region, and the cities where Qwest faces the most vigorous competition from AT&T, MCI and other CLECs. Nevertheless, after substantial discussion and investigation, DOJ required that Qwest agree to divest all Allegiance business operations in the Qwest region. Specifically, shortly before the auction, DOJ and the parties agreed to a consent decree requiring the parties to agree to hold separate and divest:

- “All [Allegiance] switches, routers, transport and associated collocation facilities located in the In-Region MSAs, and all interconnection agreements used in connection with the provision of telecommunications services.”
- “All [Allegiance] contracts with customers to provide telecommunications services to locations within the In-Region MSAs,” as well as all related business and customer records and “business plans associated with the provision of telecommunications services to customer locations in the In-Region MSAs or with marketing to potential customers in the In-Region MSAs.”
- “All [Allegiance] transport facilities physically located in whole or in part within In-Region MSAs.”
- All other in-region assets of Allegiance, including real and personal property located in the In-Region MSAs, and all federal, state and local regulatory authorizations, intellectual property, all third party agreements used in connection with Allegiance service in the MSAs. 113/

DOJ allowed only three exceptions to this broad divestiture requirement for the Allegiance operations in the Qwest region.

- Primarily Out-of-Region Contracts. First, notwithstanding the general obligation to divest all in-region service to customers, Qwest was allowed to acquire specific Allegiance contracts where the majority of services were provided to the customer outside the Qwest region and it would be “impossible or impractical” to divide the revenues and responsibilities between Qwest and the third party acquiring the divested business.

113/ Agreement among the Antitrust Division of the United States Department of Justice, Qwest and Allegiance (Feb. 11, 2004) (all citations to the Hold Separate Stipulation and Order, at Section 1(D), Definition of “Divestiture Assets”).

- Transport between In-Region and Out-of-Region MSAs. Second, Qwest was not required to divest Allegiance interexchange transport facilities crossing its region boundaries.
- Shared Systems. Third, Qwest was not required to divest Allegiance operating and related systems used primarily to provide telecommunications outside the Qwest region that could not be divided and sold to the divestiture purchaser separately. Such systems included order entry, provisioning, billing, network monitoring and the like. However, Qwest was required to make those systems available to the buyer of the in-region Allegiance business on a transitional basis to the extent needed. 114/

Qwest reserved the right to continue to argue with DOJ for a less stringent divestiture after the auction and prior to closing its transaction with Allegiance. Qwest did not and does not concede that divestiture of this scope should have been required given the number of other CLECs in these five markets, and Qwest's own more limited market position. However, DOJ's position as of that time was clear: all of Allegiance's overlapping in-region assets had to go.

However, the proposed SBC-AT&T merger is essentially the Qwest-Allegiance deal "super-super-sized." AT&T obviously is a far more significant competitor in the SBC region than the bankrupt Allegiance was in Qwest's local territory. AT&T offers many more services and facilities, and does so across all 13 states and not merely a few large cities. The SBC region is much more heavily populated, with more significant business centers and corporate headquarters. And importantly, SBC operates a leading wireless company that coordinates with its wireline business; Qwest does not.

In these circumstances, it is inconceivable that the SBC-AT&T merger could be allowed to close without AT&T similarly being required to make a substantial divestiture of its assets, customers, and service operations in the SBC territory on similar terms as the consent decree that

114/ *Id.*, Sections E, F and H (definitions of "Excluded Assets," that is, in-region customer contracts, transport facilities and shared systems excluded from general divestiture requirement).

the Department of Justice required of Qwest. Nothing has changed in a year that would change the competitive analysis here.

CONCLUSION

The proposed merger of SBC and AT&T should be rejected. But if ultimately the Commission is able to approve this merger, that would be possible only with the substantial divestiture of AT&T's in-region overlap. Anything less would result in serious anticompetitive harm and violate the public interest. In that event, the Commission would have no choice but to deny this merger.

Respectfully submitted,

QWEST COMMUNICATIONS
INTERNATIONAL INC



Of Counsel

Robert Connelly
Philip Roselli
Blair Rosenthal
Qwest Communications
International Inc.
1801 California Street
Denver, Colorado 80202

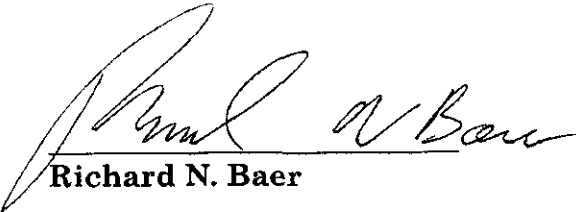
Peter A. Rohrbach
Janet L. McDavid
Yaron Dori
David Blake-Thomas
Hogan & Hartson L.L.P.
555 13th Street, N.W.
Washington, D.C. 20004
Tel: (202) 637.5600
Fax: (202) 637-5910

Attorneys for Qwest Communications
International Inc.

April 25, 2005

VERIFICATION

I, Richard N. Baer, hereby declare that I am the Executive Vice President, General Counsel and Secretary of Qwest Communications International Inc. and that I am authorized to make this Verification for and on behalf of the company. I have read the foregoing and the facts stated therein are true and correct to the best of my knowledge, information and belief.



Richard N. Baer

Dated: April 25, 2005

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554**

In the Matter of

SBC Communications Inc. and
AT&T Corp.

Applications for Consent to Transfer of Control

WC Docket No. 05-65

Declaration of B. Douglas Bernheim

April 25, 2005

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I. INTRODUCTION

I.1. Qualifications

- (1) I am the Lewis and Virginia Eaton Professor of Economics at Stanford University. I am also the Director of the Stanford Institute for Theoretical Economics (SITE), Co-Director of the Tax and Budget Policy Program at the Stanford Institute for Economic Policy Research (SIEPR), a Senior Fellow of SIEPR, and a Partner with Bates White, LLC.
- (2) I received my Ph.D. in Economics from the Massachusetts Institute of Technology in September 1982 and my A.B. from Harvard University, *summa cum laude*, in June 1979. My previous academic appointments include an endowed chair in Economics and Business Policy at Princeton University, where I was also Co-Director of the Center for Economic Policy Studies and an endowed chair in Risk Management at Northwestern University's J.L. Kellogg Graduate School of Management, Department of Finance.
- (3) I have taught courses in Industrial Organization (Ph.D. level), Microeconomic Theory (Ph.D. level and undergraduate level), Game Theory (Ph.D. level), Public Economics (Ph.D. level and undergraduate level), Behavioral Economics (Ph.D. level), and Insurance (Masters level). My Ph.D.-level teaching covers both theoretical issues and applied econometrics (data analysis).
- (4) I have published extensively in peer-reviewed academic journals and elsewhere on topics in industrial organization, strategic behavior, microeconomic theory, public economics, and other areas. My published work includes papers on the theory of cooperation and collusion, entry deterrence, and anticompetitive vertical practices. Many of my academic studies entail detailed analysis of microeconomic data using econometric methods.
- (5) I have served on the editorial boards of several professional journals, including *Econometrica*, the *Quarterly Journal of Economics*, the *Journal of Public Economics*, and the *Journal of Financial Intermediation*. I am currently serving as co-editor of the *American Economic Review*, which is the journal of the American Economics Association and the profession's most widely read periodical.

- (6) I have received a number of awards and professional recognitions, including election as a Fellow of the American Academy of Arts and Sciences, election as a Fellow of the Econometric Society, a Guggenheim Fellowship, an Alfred P. Sloan Foundation Research Fellowship, and an NBER-Olin Research Fellowship.
- (7) I have been retained as a consultant or expert witness on matters of antitrust policy and regulation in numerous matters. I have conducted detailed studies of competition and market conditions in a variety of industries, including telecommunications, health care, pharmaceuticals, railroads, airlines, aerospace, financial markets, and a number of manufactured products. I have evaluated the competitive effects of mergers in markets for mobile telephone services, Internet services, hospital services, railroad transport, aerospace products, and industrial cable. I have studied the potential anticompetitive effects of vertical practices in long-distance telephone service, high-speed data transmission, and passenger airline service. I have examined alleged price-fixing conspiracies in markets for vitamins, thermal fax paper, securities brokerage, radio spectrum, construction supplies and tools, offshore oil drilling and transport, and workers' compensation insurance. I have sponsored testimony concerning these studies before various government agencies and judicial bodies. A copy of my curriculum vita and certain of my testifying experience is located in Appendix A.

I.2. Statement of tasks and work performed

- (8) I have been asked to comment on the competitive implications of the proposed merger between SBC and AT&T. The analysis contained in this affidavit constitutes an initial assessment of the concerns raised by this significant transaction, and is based on my general familiarity with the history and ongoing events in the telecommunications industry, as well as a review of public source data and information and materials submitted by the merging parties in support of this transaction, including the lead application and an affidavit submitted by Dennis W. Carlton and Hal S. Sider.¹ As of the current time, SBC and AT&T have failed to disclose the information

¹ Declaration of Dennis W. Carlton and Hal S. Sider, February 21, 2005.

needed to conduct a full analysis of this significant transaction. In particular, they have failed to produce information regarding overlapping facilities and services.

- (9) Given my limited access to data at the current time, all my conclusions are necessarily preliminary, and in some instances my object is simply to identify possible concerns. It is my understanding that the merging parties may produce substantial additional information in response to requests from the FCC. For example, the Wireline Competition Bureau has sent an “Initial Information and Document Request” to the merging parties that requests much of the information required for a more comprehensive analysis.² I will continue to review and analyze additional data and documents during the course of this proceeding as they become available, as well as the related proposed transactions involving MCI, and will use that information to further supplement my analysis as appropriate.

I.3. Summary of conclusions

- (10) It is important to evaluate the SBC/AT&T deal in the context of the proposed transactions involving MCI. The SBC/AT&T deal is potentially much more damaging to the public interest when evaluated in the context of a Verizon/MCI deal (and vice versa). SBC and Verizon have a history of mutual forbearance, and the mergers would reinforce their incentives to divide the telecommunications market geographically. The same conclusion does not necessarily follow with respect to a Qwest/MCI deal, as Qwest appears much less likely to engage in a strategy of mutual forbearance.
- (11) The proposed SBC/AT&T transaction raises horizontal competitive concerns at the wholesale level and at the retail level for both residential and business customers. Horizontal issues become even more salient in the context of a Verizon-MCI deal, as mutual forbearance between SBC and Verizon could reduce or eliminate the benefits to consumers from existing competition between AT&T and MCI, SBC and MCI, and Verizon and AT&T. A full investigation is

² Letter from Michelle M. Carey, Deputy Chief, Wireline Competition Bureau to Mr. Patrick Grant and Mr. David Lawson, April 18, 2005.

required to determine whether these concerns rise to a level that would violate the FCC’s “public interest” standard.

- (12) The proposed SBC/AT&T transaction also raises significant vertical concerns. The overarching vertical concern is whether this deal essentially reestablishes the pre-Modified Final Judgment (MFJ) environment for traffic originating within SBC’s region. The transaction would augment SBC’s incentives and opportunities to abuse bottlenecks and market power, with the object of leveraging power between vertically related markets. These concerns also become more salient in the context of a Verizon-MCI deal, as these two highly similar transactions would result in two regional, fully integrated near monopolists, each with little likelihood of challenging the other in its home territory.
- (13) The proposed SBC/AT&T transaction potentially harms nascent competition from intermodal alternatives, and creates barriers to the emergence of robust, integrated, end-to-end, facilities-based competition. It does this by increasing the reliance of emerging intermodal competitors on SBC’s networks, thereby allowing SBC to create artificial barriers to entry and expansion. A Verizon-MCI transaction would also aggravate this concern. These concerns are particularly significant given that SBC and Verizon already control the two largest wireless companies.
- (14) In light of the many important and complex concerns raised by this merger, a thorough investigation is required.

II. BACKGROUND ON THE COMPANIES AND THE PROPOSED MERGERS

- (15) Since it is important to evaluate the SBC/AT&T deal and the proposed transactions involving MCI in tandem, I will begin by briefly describing all five companies and summarizing the three deals.
- (16) SBC began as Southwestern Bell, a Regional Bell Operating Company (RBOC), after the breakup of AT&T in 1984. Its initial footprint consisted of five states. Renamed SBC in 1994, the company acquired other Incumbent Local Exchange Carriers (ILECs), including Pacific Telesis (the parent company of Pacific Bell and Nevada Bell) in 1997 and Southern New England Telecommunications (SNET) in 1998. It subsequently acquired Ameritech in 1999, expanding into five states in the upper Midwest (Illinois, Indiana, Ohio, Michigan, and Wisconsin). SBC currently operates in a 13-state footprint covering about one-third of the U.S. population, including California, Texas, and Illinois.
- (17) SBC provides local, long distance, wireless, data, and satellite television (through its agreement with EchoStar) communications services, in addition to telecommunications equipment and directory advertising and publishing.³ It provides communications services on a stand-alone basis and in various packages to both residential and business customers. SBC has been able to offer long-distance services throughout its 13-state footprint since 2003. SBC offers traditional long-distance services nationwide, but primarily serves customers in its 13-state area and to selected customers outside its wireline subsidiaries' operating areas. As of the end of calendar year 2004, SBC had 52 million access lines, including 27 million retail customers, 18 million business customers, and seven million wholesale lines. SBC is the second-largest local phone provider in the United States behind Verizon, with nearly \$41 billion in revenue and more than 160,000 employees in 2004. SBC also owns a majority ownership position in Cingular Wireless, the nation's largest wireless company, serving 50 million customers across the country.

³ See, e.g., <http://premium.hoovers.com/subscribe/co/history.xhtml?COID=11379>, <http://premium.hoovers.com/subscribe/co/overview.xhtml?COID=11379>, and <http://yahoo.investor.teuters.com/FullDesc.aspx?country=US&ticker=SBC.N>.

- (18) AT&T, once part of the Bell System, historically provided long-distance services, but has expanded into certain local services. It operates 55,543 route miles of long-haul backbone fiber optic cable plus 21,655 additional route miles of local metropolitan fiber. Business services, including long distance, local phone, and data services, represent nearly three-quarters of its revenue. Its long-distance services include, among others, national and international calling, toll-free calling, and virtual private networks. AT&T provides local and data service in major metropolitan areas. Its data services include complete high-speed local area networks, Voice over Internet Protocol (VoIP), and dial-up.
- (19) While AT&T claims that it is no longer soliciting new residential customers, AT&T still has a large residential customer base. As of the end of the first quarter of 2005, AT&T had more than 22.7 million stand-alone and bundled long-distance customers and 3.8 million local customers. AT&T also provided DSL or dial-up data services to 1.2 million residential customers, and VoIP to more than 50,000.⁴ AT&T generated more than \$30.5 billion in revenue in 2004, employing more than 47,000 people.⁵
- (20) On January 30, 2005, SBC announced an agreement to acquire AT&T for approximately \$16 billion, or approximately \$19.71 per share of AT&T common stock. Approximately \$15 billion (or \$18.41/share) of the payment would be in the form of SBC stock, plus a \$1.30 per share special dividend from AT&T. AT&T would pay the special dividend portion, which is separate from its annual dividend of \$0.95 per share, directly to its shareholders just before the deal closes.⁶ If approved by shareholders and the FCC, the deal will create the largest telecommunications carrier in the United States.
- (21) Like SBC, Verizon is a successor to the RBOCs created after the break-up of the Bell System. It is currently the largest telecom services provider in the United States, with over 145 million access line equivalents, 2004 revenues exceeding \$71 billion, and over 210,000 employees.

⁴ See <http://yahoo.investor.reuters.com/FullDesc.aspx?target=/stocks/quickinfo/companyprofile/fulldescription&ticker=T>.

⁵ See <http://premium.hoovers.com/subscribe/co/factsheet.xhtml?ID=10103>.

⁶ See, e.g., http://www.businessweek.com/magazine/content/05_09/b3922049_mz011.htm and http://www.findarticles.com/p/articles/mi_zd2970/is_200501/ai_n9475723.

Verizon was created through mergers of three ILECs between 1997 and 1999. Bell Atlantic, which originally operated in seven states, acquired NYNEX in 1997, adding service in six northeastern states.⁷ In 1999, Bell Atlantic purchased GTE, which was then the largest non-RBOC local access provider. The combined company was renamed Verizon in 2000.

- (22) Verizon offers local, long distance, high-speed Internet, and wireless services to residential customers on a stand-alone basis and in various packages, including “all-distance” voice packages that include local and long-distance services. Verizon also offers a variety of services to business customers, including local and long-distance voice and data services. Verizon has had regulatory approval to offer long-distance services throughout its 13-state footprint since 2003, and has long been able to offer services out-of-region (including the former GTE territories). Verizon owns a majority position in the nation’s second largest wireless company, which serves more than 43 million customers across the country.
- (23) The Qwest family of companies provides local telecommunications services, long-distance services, and high-speed data, Internet, and video services to residential and business customers within a 14 state region in the western United States that is, for the most part, sparsely populated with few corporate headquarters. The Qwest family of companies also provides long-distance services and broadband data and voice communications outside of its local service area.
- (24) Since acquiring US WEST in 2000, Qwest has distinguished itself from SBC and Verizon by competing outside its regional local service footprint and by taking significant steps to facilitate competition inside its region. Qwest has introduced innovative wholesale products and entered into line-sharing agreements that have provided increased access to its facilities by competitive CLECs. The company was the first, and until last week was the only, RBOC that provides stand alone DSL. Qwest has fostered the deployment of VoIP services by not charging access fees on all VoIP originated calls to its local service subscribers. Unlike other RBOCs, Qwest does not

⁷ Bell Atlantic originally provided service in New Jersey, Pennsylvania, Delaware, Maryland, Virginia, West Virginia, and the District of Columbia. NYNEX originally provided service in New York, Massachusetts, Vermont, New Hampshire, Maine, and Rhode Island. See http://www.teletruth.org/History/bbells/bb_who.html.

have wireless assets and only re-sells limited wireless services through an agreement with Sprint. Qwest is the smallest of the RBOCs, with 2004 revenue of \$13.8 billion and 41,000 employees.

- (25) MCI was formed in the 1960s, initially providing long-distance service between St. Louis and Chicago through microwave technology. Throughout the 1970s, MCI slowly expanded its presence in the long-distance market, and flourished after the break-up of the Bell System in 1984. By 1990, it had become the nation's second-largest telecommunications company, with a fiber-optic network spanning more than 46,000 miles, and with a portfolio of more than 50 service offerings, including voice, data, and telex transmissions, in more than 150 countries.⁸ MCI was acquired by WorldCom for \$37 billion in 1998 as part of a series of WorldCom acquisitions (60 in total during the 1990s, including MFS, parent of Internet backbone provider UUNET, Brazil's Embraetel in 1998, wireless messaging firm Skytel in 1999, and the network units of America Online and Compuserve). MCI changed its name to WorldCom in 2000. The company entered bankruptcy in 2002 after restating financials for the previous three years following an internal audit, which found accounting irregularities totaling more than \$3 billion. The company emerged from bankruptcy protection in April 2004 and changed its name back to MCI.⁹
- (26) MCI offers business customers a variety of services including local voice service, long-distance voice services (both domestic and international), data services (including frame relay, asynchronous transfer mode, known as ATM, IP virtual private networks, known as IP-VPN, and private lines), and managed services that include network design, maintenance, security, web hosting and desktop implementation. MCI also serves residential customers with long-distance service, all-distance packages, and local service. MCI also operates a national and international Internet backbone. In 2004, MCI generated nearly \$20.7 billion in revenue and employed approximately 40,000 people.
- (27) On March 29, 2005, Verizon announced an agreement to acquire MCI for approximately \$7.7 billion in cash and stock, although the offer was nearly \$1 billion less than Qwest's offer at that

⁸ See http://news.com.com/MCI+The+end+of+a+telecom+icon/2100-1037_3-5577851.html.

⁹ See <http://premium.hoovers.com/subscribe/co/history.xhtml?ID=58340>.

time. It has also purchased a 13 percent share of MCI from Carlos Slim Helu, MCI's single largest shareholder, for an 11 percent premium (\$25.72 per share in cash versus \$23.10 a share to MCI's other shareholders).¹⁰

- (28) On April 21, 2005, Qwest made an offer of \$9.7 billion or \$30 per share in cash and stock. MCI declared Qwest's offer superior to Verizon's on April 23, giving Verizon until April 29 to increase its offer. At this point, the outcome of the bidding war is uncertain; however, the Verizon-MCI merger agreement remains in place.

¹⁰ See <http://www.washingtonpost.com/wp-dyn/articles/A48299-2005Apr12.html>.

III. IT IS IMPORTANT TO EVALUATE THE SBC/AT&T DEAL AND THE TRANSACTIONS INVOLVING MCI TOGETHER

- (29) At this point, the outcome of the bidding war for MCI remains uncertain. The eventual resolution will have important implications concerning the competitive effects of the SBC/AT&T deal.
- (30) To the extent the SBC/AT&T deal and an MCI acquisition raise similar issues, it would be appropriate to consider them in tandem. A decision on one deal potentially sets a strong precedent for the other. Since AT&T and MCI on the one hand, and SBC and Verizon on the other, are broadly similar, the SBC/AT&T deal and a Verizon/MCI deal would raise horizontal concentration within the same service markets and result in similar vertical combinations. Differences appear to be largely a matter of degree rather than of kind. Qwest differs from SBC and Verizon in a number of important respects. Qwest's region is much more sparsely populated than SBC's or Verizon's, and contains far fewer corporate headquarters. Unlike SBC and Verizon, Qwest has no wireless assets and does not sell wireless services (with the exception of a small reselling arrangement with Sprint). Furthermore, Qwest owns significant out-of-region assets, in particular its interexchange network. Unlike SBC and Verizon, Qwest competes with some vigor outside its region. Moreover, unlike SBC and Verizon, Qwest has facilitated competition inside its region through innovative wholesale products such as Qwest Platform Plus ("QPP") and naked DSL. While it would be appropriate for the Commission to examine many of the same issues for SBC/AT&T, Verizon/MCI, and Qwest/MCI, it is likely to find substantive differences.
- (31) The competitive effects of these three possible mergers are not separable. On the contrary, their effects are necessarily interdependent, as the mergers will reshape the competitive landscape throughout the industry. Of greatest concern is the likelihood that the two integrated giants will fail to compete with each other meaningfully in any venue, instead engaging in "détente," or what economists call "mutual forbearance," a concern that is much greater should Verizon acquire MCI than Qwest.

- (32) My concern that SBC and Verizon will engage in a strategy of mutual forbearance stems in large part from the fact that these two entities have a history of avoiding competition with each other. SBC and Verizon have taken part in little out-of-region competition, even when each serves large portions of a common metropolitan area.¹¹ This aversion to out-of-region competition comes despite their claims that past mergers would lead them to become forceful nationwide competitors as well as related merger conditions they agreed to with the FCC.
- (33) The FCC has recognized this issue in the past and has attempted to force SBC and Verizon to engage in out-of-region competition. For example, as a condition for acquiring Ameritech, the FCC required SBC to enter thirty markets within thirty months of closing the merger, or face fines of up to \$40 million for each market—potentially \$1.2 billion across all markets.¹² Similarly, as a condition for its acquisition of GTE, Bell Atlantic was required to spend \$500 million toward entering new markets—of which half had to be spent on facilities-based service—or to serve at least 250,000 customer lines within three years, or face fines of up to \$750 million.¹³ These agreements appear to have been largely unsuccessful in forcing SBC and Verizon to engage in meaningful out-of-region competition.
- (34) It is therefore critical for the Commission and antitrust authorities to undertake a thorough examination of the extent to which Verizon and SBC compete with each other in each other's territories for various lines of business. Without a comprehensive examination of this issue, the competitive consequences of these transactions cannot be fully assessed. Of course the Commission needs to investigate this question with respect to Qwest, and its decision ought to be influenced by its finding.

¹¹ This is in contrast to Qwest. Given the relatively small size of Qwest's in-region business opportunities compared to SBC and Verizon, Qwest has strong incentives to compete out of region.

¹² Federal Communications Commission, *Memorandum Opinion and Order*. CC Docket No. 98-141, In the Applications of Ameritech Corporation and SBC Communications Inc. For Consent to Transfer Control of Corporations Holding Commission Licenses and Lines, October 8, 1999.

¹³ Federal Communications Commission, *Memorandum Opinion and Order*. CC Docket No. 98-184, In the Applications of GTE Corporation and Bell Atlantic Corporation Inc. For Consent to Transfer Control of Domestic and International Sections 214 and 310 Authorizations and Application to Transfer Control of a Submarine Cable Landing Station, June 16, 2000.

- (35) The propensity for SBC and Verizon to mutually forbear has significant implications for the deals' competitive effects should Verizon prevail in its bid for MCI. For example, AT&T and MCI currently compete vigorously with each other. But as arms of SBC and Verizon, they likely would not. The key question is whether it is in the public interest to place these important economic resources in the hands of two companies (SBC and Verizon) who have historically been inclined to respect each other's geographic markets.
- (36) In addition, the mergers may well increase SBC's and Verizon's incentives and inclination to practice mutual forbearance. For example, based on their own statements, the SBC/AT&T and Verizon/MCI entities will be highly symmetrical.¹⁴ Symmetry, combined with regional specialization, creates a mutuality of interest, as well as mutual threat and a natural basis for dividing the market, that are both hard to overlook and conducive to forbearance.¹⁵
- (37) Based on the evidence available to me at this time, it appears that the risk of mutual forbearance between SBC/AT&T and Qwest/MCI would be considerably lower. As noted above, Qwest is considerably differentiated from SBC and Verizon in terms of its size, wireless assets, and the nature of its footprint. Qwest has been more aggressive in establishing out-of-region facilities, and operates as a competitor to SBC. Because of its commitment to this business strategy, it has, unlike SBC and Verizon, worked to promote conditions that open local networks. Thus, within its own region, Qwest is unique among RBOCs in offering naked DSL, despite FCC

¹⁴ E.g., see Robert A. Saunders, *Critical Implications of the Proposed Qwest MCI Merger: An Industry White Paper* (The Eastern Management Group, 2005) at p. 2, fn. 1:

“[T]he two companies (SBC-AT&T and Verizon-MCI) would be almost mirror images of one another with similar revenues, access lines and payrolls.”

This paper was commissioned by Verizon.

See also, Legg Mason, Qwest Communications Int'l., Inc. NYSE:Q, Reports Indicated Continued Q/MCI Discussions, April 19, 2005, p.1:

“Finally we reiterate our view that the enterprise sector is more sustainable should VZ prevail [as the acquirer of MCI] as VZ/MCI and SBC/T would have very similar business mixes and thus more aligned interests in the marketplace...”

(Parentheses added.)

¹⁵ E.g., see Merger Guidelines, §2.11:

“[M]arket conditions may be conducive to or hinder reaching terms of coordination. For example, reaching terms of coordination may be facilitated by product or firm homogeneity...”

rulings that this is not required. In April 2004, Qwest became the first ILEC to stop charging access fees on telephone calls to its PSTN customers from customers of other VoIP providers. Qwest has taken regulatory positions opposite of other ILECs in terms of opening up facilities to CLEC collocations.¹⁶ Furthermore, and particularly relative to the SBC/AT&T and Verizon/MCI transactions, significantly more of MCI's business is outside the Qwest region. The deal would appear to make little sense unless Qwest planned to further increase and strengthen its out of region activities.

¹⁶ See http://gulfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6511959250.

IV. HORIZONTAL OVERLAPS

IV.1. A framework for analysis

- (38) While the merging parties have characterized this transaction as combining businesses that are largely complementary in nature,¹⁷ it has significant horizontal as well as vertical aspects. In order to separate the horizontal issues from vertical issues, I approach the horizontal concerns as follows. SBC and AT&T operate in many input markets and many output markets, differentiated by both geography and product.¹⁸ One can imagine, in a completely unintegrated world, a separate firm operating each of these pieces, e.g., SBC Loops, SBC transport, SBC Switching, and so forth (in each instance identified with an appropriate geographic area), and similarly for AT&T. These would be wholesale companies. In this unintegrated world, there would also be a retail “aggregator” of these inputs for each identifiable consumer market (e.g., SBC residential service for a geographic area). Currently, all these SBC wholesale and retail “firms” are owned and operated by a single entity, and similarly for the AT&T “firms.” However, only the overlaps in each of these segments are directly relevant to a traditional analysis of horizontal concentration.
- (39) The actual state of integration between these component firms into single entities—SBC and AT&T—is also relevant to an analysis of the horizontal concentrating effects of the merger, insofar as it relates to barriers to entry. For example, high concentration in the retail aggregator functionality may be particularly problematic if market power therein is sustained by control of integrated facilities. However, I take up these types of issues in the next section, under the heading of vertical concerns.

¹⁷ See Carlton and Sider, at p. 3.

¹⁸ In using the term “market,” I am merely using it in the colloquial sense and am not making any judgments about relevant antitrust markets at the current time.

IV.2. Concentrating effects at the wholesale level

IV.2.1. Local facilities

- (40) By virtue of its historical monopoly position as an ILEC, SBC is the dominant provider of the wholesale inputs required by all telecommunications firms for providing access, including loops, transport, and switches.
- (41) As a general matter, AT&T has been a leader among competitive local exchange carriers (CLECs) in providing alternative facilities for these inputs. AT&T's facilities-based local operations derive in part from its 1998 purchase of local service pioneer Teleport Communications Group (TCG). For the most part, its investments in these facilities have continued on an upward trajectory. According to New Paradigm Resources Group, AT&T was the leader among CLECs in voice switches (with 150 in 2004),¹⁹ data switches (also with 150 in 2004),²⁰ and (by a wide margin) competitive access lines (with 8.5 million in 2004, reflecting 6.3 percent growth over 2003).²¹ As of 2004, AT&T had 21,000 route miles of local fiber (reflecting 23.5 percent growth over 2003).²² AT&T-owned facilities connected about 6,400 buildings in 2004. It is also noteworthy that AT&T as a company is by far the largest CLEC, and in a sector plagued by financial weakness,²³ is also among the most financially viable CLECs.
- (42) In evaluating this transaction, it is important to keep in mind that with respect to the above metrics, MCI is generally second to AT&T among CLECs in terms of its deployment of facilities and overall financial strength. In terms of voice switches, MCI is number two, with 112.²⁴ In terms of data switches, MCI is number seven, with 58.²⁵ In terms of total competitive

¹⁹ New Paradigm Resources Group, Inc., "CLEC Report 2005," (2005), Table 15.

²⁰ Ibid., Table 19.

²¹ Ibid., Table 20.

²² Ibid., Table 15.

²³ E.g., see ALTS, "The State of Local Competition 2003," April 2003, at 18 (showing 15 of 19 CLECs having net losses and 7 of 20 CLECs having negative EBITDA).

²⁴ New Paradigm Resources Group, Table 16, pp. 4-5.

access lines, MCI is number two, with six million.²⁶ The next closest competitor in terms of access lines is McLeod with one million—far less than either MCI or AT&T. MCI is also the second largest CLEC in terms of revenue.²⁷

- (43) The preceding statistics are, of course, aggregated at the national level. An analysis involving overlaps between SBC and AT&T must be undertaken at a much more granular level. Indeed, as noted by the FCC in the latest UNE rulings, in terms of transport, the relevant market is “route by route.”²⁸ In terms of loops, the FCC has most recently held that the relevant market is the “wire center service area.”²⁹ AT&T has supported even narrower definitions of the relevant market in the past, arguing that, in terms of loops, the relevant market is a single building, or perhaps an even smaller unit like a floor or even a customer (on the grounds that, just because a building is lit, it does not follow that all floors are lit, or are easily lit).³⁰ The market definition should be revisited and evaluated in the context of the specific competitive issues raised by this particular merger.³¹

²⁵ Ibid., Table 19.

²⁶ Ibid., Table 20.

²⁷ Ibid., Table 22.

²⁸ E.g., see UNE Remand Order, February 4, 2005 at ¶¶78—80. The FCC noted that even if a connection between two wire centers took place through a third intermediate wire center or switch, the relevant market was still the the two end points (UNE Remand Order at ¶80).

²⁹ UNE Remand Order at ¶¶155-161.

³⁰ E.g., see Declaration of Michael E. Leshner and Robert J. Frontera, In the Matter of Review of the Section 251 Unbundling Obligations of Local Exchange Carriers at 19:

“Of the limited number of buildings that AT&T serves solely through its own facilities [proprietary] of them are served using a “fiber to the floor” arrangement. As a result, even though the building may be on-net for a particular customer in the building, AT&T may not be able to use those facilities to serve other customers in the very same building. Thus, the fact that a building is on-net does not mean all customers in a particular building are or may being (sic) served using those facilities...”

³¹ As noted in the *Merger Guidelines*, for purposes of antitrust analysis, market definition focuses solely on demand-substitution factors, i.e., the choices facing consumers (see *Merger Guidelines*, §1.0). The choices facing wholesale customers in terms of the facilities used to serve final customers appear quite granular. This is in contrast to the MSA-wide CLEC count undertaken by Carlton and Sider to evidence CLEC competition. (See Carlton and Sider, Tables 1 and 2.)

- (44) Given AT&T's role as a leading owner of local facilities, it is entirely possible that a granular analysis will identify geographic pockets in which the concentrating effects of the merger are even more problematic than the national statistics would suggest. There may, for example, be important instances of "merger to monopoly."
- (45) Another problem with the Carlton and Sider analysis of horizontal effects is that they fail to recognize the importance to many CLECs of originating and terminating traffic with AT&T. With SBC's announced plans to migrate this traffic to SBC's network in-region, the transaction will further decrease the market share and financial strength of other carriers.
- (46) My concerns are further heightened by the fact that MCI is also a leading owner of local facilities. To the extent Verizon acquires MCI, and SBC and Verizon engage in mutual forbearance, the mergers will remove the competitive discipline offered by both AT&T and MCI.
- (47) It is important to consider the potential effects of the merger on future facilities, as well as current facilities. AT&T has previously pointed out that the high sunk cost of constructing new facilities is a serious barrier to the growth of local competition.³² Nevertheless, AT&T and MCI appear to be the most likely, best-situated candidates for deploying such facilities. The merger therefore removes the most likely sources of new competitive capacity in these markets, and a Verizon/MCI deal could remove the second.
- (48) Although AT&T may not have a large share of local facilities overall, it remains the leading alternative to SBC, and it appears to have a large share of local facilities not controlled by SBC. For example, based on New Paradigm's report, AT&T has more than 12 percent of all CLEC voice switches nationwide, and MCI accounts for another seven percent. Since SBC and Verizon have shown no inclination to voluntarily engage in aggressive wholesaling, the removal of this independent capacity from the wholesale market would be problematic.

³² E.g., see Declaration of Anthony Fea and Anthony Giovannucci, In the Matter of Review of the Section 251 Unbundling Obligations of Local Exchange Carriers at 11-33.

- (49) Whenever a transaction makes a very large competitor even larger, it raises significant competitive concerns, even if the change in its share would be relatively small. This view is in keeping with the Merger Guidelines, which acknowledge heightened concerns in such situations.³³
- (50) Cable and wireless may provide viable alternatives to some consumers, in some settings, for some geographic markets. Their facilities are not considered in the preceding statistics on wholesale capacity. However, their competitive significance in the context of this merger must be evaluated on a market-by-market basis. I discuss this in the context of the retail markets below.

IV.2.2. Long-distance transport facilities

- (51) The mergers will also substantially increase the concentration of capacity for long-distance transport, and reduce the intensity of competition in related wholesale markets. This effect comes from two sources. First, SBC has long-distance transport capacity of its own, especially within-region, as well as nationwide capacity that it leases from WilTel and other carriers. Its combined share with AT&T may be substantial, particularly along certain routes. On some secondary and tertiary routes to smaller cities, SBC and AT&T may be the only firms with transport facilities. The aggregated nationwide analysis of Carlton and Sider fails to address these overlaps.

³³ E.g., see Merger Guidelines, §1.5:

“[M]arket concentration is a function of the number of firms in a market and their respective shares. As an aid to the interpretation of market data, the Agency will use the Herfindahl-Hirschman Index (“HHI”) of market concentration. The HHI is calculated by summing the squares of the individual market shares of all the participants. Unlike the four-firm concentration ratio, the HHI reflects both the distribution of the market shares of the top four firms and the composition of the market outside the top four firms. It also gives proportionately greater weight to the market share of the larger firms, in accord with their relative importance in competitive interactions...”

(Emphasis added.)

- (52) Second, if Verizon acquires MCI and then engages in mutual forbearance with SBC, then, together, the deals may have effects similar to those that would follow from combining the long-distance transport facilities of SBC, AT&T, Verizon, and MCI. To the extent there are geographic areas in which all four firms have long-distance transport facilities, the competitive effects of the deals are potentially similar to a four-to-one merger. In areas where either SBC or Verizon has long-distance transport facilities (but not both), the competitive effects of the deals are potentially similar to a three-to-one merger. In general, the deals may remove or at least reduce the benefits to consumers that flow from competition between AT&T and MCI.
- (53) Thus, in light of the potential for mutual forbearance, the horizontal consequences of the SBC/AT&T deal and a Verizon/MCI transaction in wholesale long-distance transport could be more severe than a simple horizontal merger between AT&T and MCI.
- (54) Even with these two mergers, significant independent long-distance transport capacity would remain. However, it is not clear that this would be sufficient to maintain the current level of competitive intensity. Indeed, the remaining independent facilities-based long-distance firms would be heavily dependent on SBC and Verizon for interconnections for access, as well as long-distance traffic, so SBC and Verizon would be in a much stronger position with respect to their ability to manipulate this market to their advantage. I return to this issue below under the heading of vertical concerns.
- (55) Potential entry (that is, the addition of new long-distance transport facilities by independent companies) may mitigate some of these concerns. However, facilities-based competition in long distance grew slowly over the course of a decade or more following the MFJ, as companies developed from resellers into facilities-based competitors. Replicating this under the best conditions would take time.
- (56) Moreover, the growth of facilities-based long-distance competition occurred in a world where SBC and Verizon were not permitted to sell long-distance services. It is not at all clear that the same phenomenon could occur with these firms dominating long-distance markets (I discuss related issues below under the heading of vertical concerns).

IV.3. Concentrating effects at the retail level

IV.3.1. Introduction

- (57) SBC and AT&T are direct horizontal competitors for voice and data services in the consumer and business marketplaces. In many instances they are the most significant competitors for significant groups of customers. As with any horizontal transaction, it is important to examine these competitive overlaps thoroughly. Since the overlaps differ from service to service, place to place, and by customer classification, it is necessary to conduct this analysis on a granular level. The data needed to do so are not yet available, and Carlton and Sider appear not to have conducted such an analysis.
- (58) In terms of evaluating service overlaps at the retail level, it is difficult at the current time, based on the data immediately available, to provide a rigorous application of the approach to market definition outlined in the Merger Guidelines.³⁴ Nevertheless, in the context of merger reviews, the Commission and Antitrust Division have distinguished between services provided for residential customers and services provided to business customers. Further, within the business category, it is customary to distinguish between small and medium business customers (SMB), and enterprise customers (enterprise). Enterprise customers consist of the largest business customers as well as many government and institutional customers. Each of these three groups generally has very different telecommunications needs. I first discuss competitive issues among business customers. I then turn to a discussion of residential customers.

³⁴ U.S. Department of Justice and Federal Trade Commission, Horizontal Merger Guidelines, Issued April 2, 1992, Revised April 8, 1997. Under the Horizontal Merger Guidelines, a market has both a geographic and product dimension. Markets are defined as a group of products, and a geographic area, in which a firm that is the sole provider of the product in the geographic area would profitably impose a small but significant non-transitory increase in price (SSNIP), holding constant the terms of sale of all other products. (See Horizontal Merger Guidelines, §1.0.) If, in response to the SSNIP, a sufficient number of consumers would substitute other products to make the price increase unprofitable, then the assumed market is expanded to include the “next best” substitutes until the test is satisfied.

IV.3.2. Business customers

IV.3.2.1. Local business telecommunications services

- (59) Given the ILECs' historical dominance of local services and the continuing need for interconnection with an ILEC's network to provide such services, it's not surprising that SBC's share of local business service is high while AT&T's is low.³⁵ [

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] ³⁶ AT&T is an important head-to-head competitor with SBC in this space, and, consistent with the Merger Guidelines, SBC's high share implies that this overlap should raise potential competitive concerns.³⁷ AT&T's competitive significance is magnified by several factors: it is often the second largest provider of these services, it has a highly established brand name that few competitors would be able to replicate,³⁸ and it is in a stronger financial position than most other CLECs.

- (60) The same factors also imply that simple divestiture may not be an acceptable remedy. A worthy acquirer would have to have the competitive strength to maintain AT&T's competitive position.
- (61) Since MCI is the next leading competitor in many instances, a Verizon/MCI deal would magnify these concerns. As a consequence of mutual forbearance, Verizon may have diminished incentives to operate MCI in competition with SBC after the mergers, especially in the SBC

³⁵ Bernstein Research, "U.S. Telecom: Enterprise Market to Drive Half of the Industry's Growth," January 21, 2005.

³⁶ [***Redacted***]

³⁷ Based on the shares of the two merging parties alone, the market would be highly concentrated and the change in the HHI indicates the merger is "likely to create or enhance market power or facilitate its exercise." (See Merger Guidelines, §1.51.)

³⁸ Even the merging parties admit this. See Carlton and Sider at p. 8:

"...AT&T has continued to fund innovation and investment in its networks and has maintained its reputation as a leading provider of innovative and high-quality voice and data services for business customers..."

region. Thus, the mergers may eliminate effective competition from both the first and second alternatives to SBC.

- (62) While AT&T and MCI have had limited success to date in local business services, their future success depends on the technological, regulatory, and legal environments, all of which are changeable. Conditions may arise that are more conducive to local competition. If so, AT&T and MCI are the most natural competitors; the SBC/AT&T and Verizon/MCI mergers would eliminate them.
- (63) The Commission should evaluate whether intermodal alternatives currently provide effective constraints at the retail level for business consumers of local services sufficient to constrain a post-merger exercise of market power. There is a need to study seriously and systematically the extent and impact of intermodal alternatives on local competition in different geographic areas.
- (64) It is important to evaluate claims of actual intermodal competition through careful consideration of quantitative evidence concerning systemic competitive activity, of the type usually required in merger inquiries, and to evaluate this evidence by applying the usual competitive standards used in merger work. It is not enough that competition is high by the historical standards of a traditionally monopolized industry. This analysis must be performed at a sufficiently granular level, as the relevant geographic markets are potentially quite small. AT&T has argued for such an analysis in other contexts.
- (65) The Commission should evaluate whether cable service is a viable alternative for business customers and sufficient to constrain the post-merger exercise of market power. It is critical that this analysis take place on a market-by-market basis since there is wide variation. Cable facilities do not pass through many downtown areas where many business customers are located. Indeed, data from the FCC indicates that on a national basis there is little deployment of cable for advanced business services. In particular, it appears that cable accounts for only 2.8 percent of all high-speed lines with at least 200 kbps in at least one direction, and 2.7 percent of all high-speed lines with at least 200 kbps in both directions (the statistics are based on Tables 1 through 4 of *High Speed Services for Internet Access*, June 2004, after eliminating residential and small business lines from the totals). Further, bandwidth limits reduce the appeal of cable alternatives for many business customers.

- (66) While the merging parties place considerable emphasis on the growth of wireless calling, they do not make a distinction between the business and consumer segments.³⁹ The Commission should evaluate whether broadband wireless services (both fixed and mobile) are sufficiently advanced to provide a meaningful alternative for many business customers. Data from the FCC indicates that on a national basis there is little deployment of advanced wireless services. Satellite and fixed wireless comprised 1.3 percent of all high-speed lines with 200 kbps in at least one direction, and 0.4 percent of all high-speed lines with at least 200 kbps in both directions. Eliminating residential and small business lines from these totals results in satellite and fixed wireless penetration of 1.44 percent in one direction and 0.92 percent in both directions. (These statistics are based on Table 1 through 4 of *High Speed Services for Internet Access*, June 2004.)
- (67) Also, it is important to keep in mind that SBC and Verizon are, by far, the two largest providers of wireless services. Currently, their desire to become all-service providers for enterprises that are currently customers of AT&T and MCI provides SBC and Verizon with strong incentives to develop advanced wireless capabilities. After acquiring the targeted enterprise business through the proposed acquisitions, their incentives to develop these alternatives may be significantly attenuated. Thus, despite the parties' contention that there are no competitive concerns regarding this transaction in the wireless area since there is no competitive overlap in wireless,⁴⁰ this is not the case.
- (68) The impact of VoIP in the business segment is as yet unclear. Since VoIP is an Internet service, some customers appear to have serious concerns about security. Further, VoIP services (as well as cable and wireless) are still highly reliant on the incumbent local exchange network for UNEs or special access controlled by SBC. In addition, AT&T is the leading provider of business VoIP services, as well as a leading wholesale supplier to other providers of business VoIP services.

³⁹ E.g., see Carlton and Sider at pp. 14-15.

⁴⁰ See Carlton and Sider at pp. 29-30.

IV.3.2.2. Long-distance services

- (69) Within the SMB segment in SBC's region, SBC's share of long-distance service is increasing rapidly while AT&T remains a major presence. This horizontal overlap clearly raises straightforward competitive concerns. [

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] The merging firms are clearly the two largest providers of such services in the SBC footprint. Moreover, such shares clearly place the post-merger market in the highly concentrated range. Based on these market shares, the merger must be seen as likely to create or enhance market power, or facilitate its exercise, according to the standards set forth in the Merger Guidelines. Once again, the likelihood of mutual forbearance heightens this concern, as the SBC/AT&T and Verizon/MCI mergers may also eliminate or at least attenuate the existing competition between AT&T and MCI.

- (70) Historically, the IXCs have been the leading providers of long-distance services for enterprise customers. SBC has a much smaller share of the market. However, the proposed merger still raises competitive concerns in this venue, for three reasons.
- (71) First, SBC is, at a minimum, a significant potential competitor for many enterprise business customers in its footprint, particularly inasmuch as it evidently has designs on this market.
- (72) Second, it may be appropriate to analyze the enterprise businesses at a granular level, differentiating between different types of enterprises. If different types of customers have specialized service needs (e.g., banks vs. airlines), there may be classes of customers for whom the merging parties are particularly well suited.⁴¹
- (73) Third, it is again important to acknowledge that, in combination with a Verizon/MCI combination, the merger may remove, or at least reduce, the benefits to consumers flowing from AT&T's competition with MCI. That is, mutual forbearance between SBC and Verizon after the mergers could work to the detriment of enterprise customers.

⁴¹ E.g., Sprint offers specific telecommunications "Solutions by Industry." (See <http://www.sprint.com/business/products/sections/solutionsByIndustry.jsp> (Visited April 22, 2005).)

IV.3.3. Residential customers

- (74) Though the removal of the MFJ's line-of-business restrictions have made traditional distinctions between local and long-distance service less relevant at the retail level, it is difficult to describe AT&T's position without differentiating between local, long distance, and all distance subscribers. To my knowledge, AT&T still has a sizable number of residential long-distance subscribers. In its region, SBC has the lion's share of local and all-distance residential subscribers, and is growing rapidly in long distance primarily by migrating customers to all-distance services. For long-distance subscribers, the post-merger shares of the merged entity appear to be quite high, which suggests that the transaction may raise standard horizontal concerns.
- (75) The issue of horizontal concentration is, however, not quite so standard. AT&T claims that it no longer actively solicits residential customers, and the retail long-distance segment itself may disappear as it is absorbed into the all-distance segment. Even so, the transaction does raise at least two concerns about horizontal competitive effects in markets for residential retail service.
- (76) First, AT&T's many residual long-distance subscribers will likely fare better if SBC is forced to compete for their business, inducing them to switch through attractive offerings, instead of acquiring their business by virtue of taking over AT&T.
- (77) Second, AT&T's inability to compete effectively for residential subscribers is a consequence of the current technological, regulatory, and legal environments. The environment may change. Thus, despite the parties' contention that current market shares overstate future competitive significance,⁴² the opposite may be the case. For example, wireless and cable technologies probably will eventually provide viable alternatives to the wireline loop for most customers. When this occurs, an independent AT&T, followed closely by an independent MCI, would be positioned as perhaps the most natural entrants into residential retail services. They might attempt it themselves (as they have done in the past) or in partnership with an intermodal CLEC, or they might become acquisition targets for intermodal CLECs seeking to provide end-

⁴² E.g., see Carlton and Sider at pp. 28-29.

to-end service. Allowing the acquisition of these firms by SBC and Verizon (which is likely to practice mutual forbearance with SBC) therefore removes the leading potential entrants.

- (78) It is important to emphasize that the Commission should evaluate whether intermodal alternatives provide effective post-merger constraints at the retail level for SBC's residential customers in particular geographic markets. There is a need to study seriously and systematically the extent and impact of intermodal alternatives on competition for residential subscribers. In view of apparent variations in competitive activity across different locations, this question must be addressed at a sufficiently granular level from a geographical perspective. Cable operators have certainly started to provide voice and data services in many markets. However, the extent of this activity varies greatly from market to market, necessitating a granular analysis. In some areas, the cable operator does not yet provide phone service; in others, cable companies have not yet deployed facilities, especially in rural areas where AT&T and SBC have strong market positions. It is important to assess the competitive impact of cable telephony from a careful analysis of market outcomes, including its effect on SBC's pricing.
- (79) With respect to wireless services, it is noteworthy that Professor Richard Gilbert, on behalf of SBC, in the recent Cingular/AT&T wireless transaction, argued that wireless is not in the relevant product market for wireline services, precisely contrary to the position SBC conveniently advocates in the current matter.⁴³
- (80) The assertion that wireless provides a meaningful competitive alternative to wireline in SBC territory remains an issue for the Commission to evaluate in the context of post-merger market power on a market-by-market basis.⁴⁴ The quality and reliability of service differ considerably. Wireless connections are also considered less secure. In many respects, wireless and wireline products function more as complements than as substitute. It appears that very few households have actually "cut the cord" and gone completely wireless. For example, Partner Group reports that only two percent of U.S. households, or 2.2 million homes, have wireless-only services.⁴⁵

⁴³ Declaration of Richard Gilbert at 17.

⁴⁴ E.g., see Carlton and Sider at p. 14-15.

⁴⁵ Reinhardt Krause, *Investor's Business Daily*, January 25, 2005, p. A08.

- (81) However, it is also important to bear in mind that SBC is a significant provider of wireless services through its Cingular/AT&T Wireless joint venture with BellSouth. [

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] It is

especially problematic for SBC to argue that its own wireless services constrain the anticompetitive effects of its proposed acquisition of AT&T. In fact, it is more likely that the consolidation would reduce incentives for vigorous wireless/wireline competition.

- (82) While VoIP is emerging as an alternative to traditional switched voice services, its competitive impact on SBC, in terms of price discipline, remains unclear and unproven. This effect likely varies by region, so a granular geographic analysis is again required. If residential customers have significant concerns regarding VoIP in terms of quality and security, its ultimate commercial success may be limited, at least until these problems are resolved.

- (83) It is also important to recognize that VoIP requires a subscriber to obtain a broadband connection from SBC or a cable company in SBC's territory. Its competitive effects are inherently limited where broadband penetration is low. In addition, by refusing to offer naked DSL within its region, SBC effectively forces potential subscribers of VoIP-over-DSL to purchase duplicative voice service, which undermines its appeal. Consequently, the Commission should fully investigate the extent to which VoIP provides a significant restraint before drawing any conclusions.

V. VERTICAL CONCERNS

- (84) The overarching vertical concern is whether the transaction essentially reestablishes the pre-Modified Final Judgment (MFJ) environment for traffic originating within SBC's region. Based on my preliminary analysis, it appears that the merger could well increase both the incentive and opportunity to artificially handicap unintegrated or partially integrated rivals, to the detriment of consumers. These concerns become more salient in the context of a Verizon-MCI deal, as the twin transactions would result in two regional, fully integrated near monopolists, each with little likelihood of challenging the other in its home territory.

V.1. Existing incentives and opportunities for abuse

- (85) Under a variety of conditions, vertically integrated firms with significant market power at one or more levels of a vertical chain have incentives to create artificial disadvantages for unintegrated (or partially integrated) rivals. Regulation can create this incentive by limiting the wholesale price of an input over which the integrated firm has market power. By denying or impairing competitors' access to the critical input, the integrated firm increases the costs and/or degrades the quality of rivals' final products. This permits the integrated firm to exercise its latent market power over the input by raising the price of the final product, or (if this is not allowed) simply by capturing a larger share of the market for the final product at a price exceeding variable cost. Notably, in some settings, similar incentives exist even when price regulation is absent.
- (86) SBC continues to have significant market power over many elements of the local network. Competitors offering final services to consumers in competition with SBC—like CLECs and, in some cases, IXCs—are dependent on access to SBC's network. Moreover, it appears that SBC continues to face binding price regulation with respect to the wholesale prices of critical network elements. Consequently, SBC has a strong incentive to deny or impair competitors' access to these critical inputs.
- (87) The history of SBC's dealings with CLECs raises considerable concern that it does indeed have the incentive and opportunity to handicap rivals. To properly assess the likelihood of

anticompetitive vertical effects, a thorough investigation of past CLEC treatment by SBC is therefore required.

V.2. The incremental effects of the proposed mergers

- (88) The proposed SBC/AT&T and Verizon/MCI mergers heighten concerns about vertical abuses in at least three ways.
- (89) First, as discussed in Section IV.2, the proposed merger consolidates SBC's market power over components of the local network by removing the competitive alternatives offered by AT&T, as well as (through mutual forbearance if Verizon's proposed acquisition materializes) MCI. Greater market power creates a greater incentive to engage in abuse, and to do so to a greater degree.
- (90) Second, the merger provides SBC with an extensive national network of long-distance transport facilities. Currently, SBC relies to a great extent on independent IXC wholesalers for out-of-region long-distance transport. To the extent other rivals access SBC's network through these IXCs, it would be challenging for SBC to impair these rivals without also impairing its own services. Even if these other IXCs carried no other traffic, SBC would be limited, by virtue of the independence of these IXCs, in its ability to create interconnection advantages for these IXCs, relative to other independent IXC wholesalers. This state of affairs would change after the merger. SBC would rely to a much greater extent on in-house long-distance transport acquired from AT&T. By controlling access to AT&T's network, it would control access to its own network through AT&T. Accordingly, it would be in a position to create artificial advantages for its out-of-region traffic without leaving opportunities for others to share those advantages. In addition, by virtue of owning AT&T's facilities, it would have greater scope for engineering these artificial advantages. In this regard, it is notable that SBC lists, as one of the advantages of the merger, an enhanced ability to better control and monitor end-to-end network performance.⁴⁶

⁴⁶ E.g., see Carlton and Sider at p. 20-21.

- (91) Third, the mergers may also provide SBC with additional and potent tools to cripple the CLECs. As noted previously, the SBC/AT&T deal, along with the proposed Verizon/MCI deal, would remove AT&T and MCI as independent facilities-based wholesalers supplying the CLECs with long-distance transport services (and call termination). This, by itself, may result in reduced competition and higher prices for necessary CLEC inputs. In addition, remaining independent facilities-based IXCs, are heavily dependent on SBC and Verizon, and may be considerably more susceptible to pressure than AT&T and MCI. Thus, direct control over AT&T and MCI may provide SBC and Verizon with considerably enhanced ability to damage the CLECs by making call termination more costly.
- (92) The SBC/AT&T and Verizon/MCI deals would not literally recreate the pre-MFJ environment, inasmuch as there would be two regional near-monopolies rather than one nationwide near-monopoly. However, the consequences for consumers are potentially similar (to the extent the merged entities regionally specialize and practice mutual forbearance, which they have incentives to do).

VI. THE FUTURE OF INTERMODAL COMPETITION

- (93) Though robust, nationwide, intermodal competition is not yet here, the remaining barriers to technical and economic feasibility may fall in the relatively near future. How soon this will occur is a matter of debate; it is by no means assured within any particular time frame. It appears in various geographic areas on a developing basis.
- (94) In one optimistic vision for the future of this industry, many integrated firms will compete for each customer's business with end-to-end service offerings, with no firm holding a unique bottleneck.⁴⁷ Promoting the realization of this vision is a reasonable objective for public policy.
- (95) However, abuses by SBC (and Verizon) have the potential to forestall the emergence of robust, integrated intermodal competition. This new generation of CLECs—those that offer comprehensive and competitive local services through wireless or cable facilities—cannot be expected to build complete, integrated national networks instantaneously. They will need to rely, at least for a time, on other firms (whether through contracts or acquisitions) to provide various components of their services, such as long-distance transport and call termination.
- (96) If SBC (and Verizon) gain greater control over the services on which these new CLECs will need to depend, they will have greater ability to cripple CLEC growth and the eventual emergence of integrated intermodal competition. By way of analogy, the development of microwave relay for long-distance transport was a form of “intermodal competition” when MCI introduced it in the 1960's. But MCI had an uphill battle because it was dependent on the rest of the Bell System, and therefore vulnerable to the Bell System's abuses.
- (97) Even when all technical and economic barriers to intermodal competition fall, SBC (and Verizon) will continue to have the ability and incentive to undermine competition from CLECs. This is because they will continue to have substantial control over call termination, simply by

⁴⁷ E.g., see Remarks of Michael Powell before the Progress & Freedom Foundation, December 8, 2000 (available at <http://www.fcc.gov/Speeches/Powell/2000/spmkp003.html>).

virtue of their high market share. To understand why, suppose a CLEC network has a true economic advantage on call origination (reflected in a price differential), but a larger artificial disadvantage on call termination through SBC's network (due to SBC behavior). With high SBC market share, most calls from the CLEC network will terminate on the SBC network in its region. Consequently, as a result of SBC's behavior, the CLEC's technologically superior service looks worse than SBC's service from the customer's perspective. This means the customer will not sign up with the CLEC, which in turn implies that SBC's market share (and its ability to extract supracompetitive rents) is self-sustaining.

- (98) The proposed merger would consolidate SBC's control over termination by placing more of the existing local capacity in the hands of these entities, and by placing other existing CLECs at a disadvantage by making them more dependent on SBC.

- (99) The proposed AT&T/SBC and Verizon/MCI mergers would, together, also increase the dependence of the new intermodal CLECs on SBC and Verizon. By significantly reducing the availability of independent sources of service components for completing nascent networks, and by removing AT&T and MCI as potential partners, the mergers would make the new intermodal CLECs more vulnerable to SBC's and Verizon's abuses.⁴⁸ These emerging competitors will probably fare better once they reach the point of committing to comprehensive telecommunications offerings if they are free to partner with (or acquire, or be acquired by) an independent AT&T and an independent MCI (or an MCI that remains meaningfully active in the wholesale market), *rather than rely on SBC and Verizon, or on smaller firms that are in turn beholden to SBC and Verizon.*

- (100) In contrast, a Qwest acquisition of MCI appears less likely to raise such concerns. First, as noted above, Qwest has demonstrated that it is willing to engage in intermodal forms of competition as demonstrated by its national VoIP activities. The acquisition of MCI will strengthen Qwest's ability to engage in these and other activities. Further, as noted above,

⁴⁸ Indeed, AT&T appears poised to engage in a substantial push to enroll VoIP subscribers absent this merger. Thus, AT&T's VoIP phone service, AT&T CallVantageSM, was available in areas of California, Massachusetts, New York, New Jersey, and Texas in early 2004. AT&T had plans to expand this product to 100 markets by the end of 2004.

Qwest has shown more openness to allowing CLECs access to its facilities. The possibility that MCI will remain as a possible partner for intermodal CLECs is much stronger under a Qwest acquisition than an MCI acquisition.

- (101) Consequently, the vision of robust, integrated intermodal competition is better served by keeping AT&T and MCI independent of SBC and Verizon.

This conclusion depends on the assumption that AT&T and MCI will remain in business as independent entities, or are sold to alternative entities which will use the assets to compete with SBC and Verizon, assuming the mergers are not consummated. In assessing the likelihood of this eventuality, it is important to distinguish sunk costs from other costs. AT&T and MCI have sunk enormous investments into network facilities, and financed these investments in part through borrowing. Inability to cover interest expense on debt does not threaten these firms as going concerns; it simply means that the firms may have to reorganize, with debtholders either making concessions or converting their claims to equity. Given that their large network costs are already sunk, one must raise serious questions concerning any assertions that AT&T and MCI would be unable to survive as going concerns in a low margin environment.

VII. CONCLUSION

- (102) The proposed transaction raises serious horizontal and vertical concerns. The parties' filings to date do not adequately address these concerns. Neither has SBC nor AT&T yet provided adequate data and other information to permit a thorough analysis of these concerns by other interested parties. No decision concerning the transaction should be taken until the horizontal and vertical concerns have been thoroughly investigated. Based on my preliminary analysis, it is my opinion that such an investigation will identify serious problems, and is likely to overturn claims that the transaction meets the Commission's public interest standard.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

Signature:



B. Douglas Bernheim

Date:

April 25, 2005

**Appendix A:
B. Douglas
Bernheim CV**

January 2005

CURRICULUM VITAE

B. Douglas Bernheim

Department of Economics
Stanford University
Stanford, CA 94305-6072

Phones: 650-725-8732 (W)
650-725-5702 (FAX)
650-424-0443 (H)

Education

Massachusetts Institute of Technology, 1979-1982, Ph.D.

Harvard University, 1975-1979, A.B.

Academic Positions

Stanford University, Department of Economics, 1994-present. Lewis and Virginia Eaton Professor of Economics.

Princeton University, Department of Economics, 1990-1994. John L. Weinberg Professor of Economics and Business Policy.

Northwestern University, J.L. Kellogg Graduate School of Management, Department of Finance, 1988-1990. Harold J. Hines Jr. Distinguished Professor of Risk Management.

Stanford University, Department of Economics, 1987-1988. Associate Professor with tenure.

Stanford University, Department of Economics, 1982-1987. Assistant Professor.

Honors and Awards

John Simon Guggenheim Memorial Foundation Fellowship, 2001-02.

Fellow, Center for Advanced Study in the Behavioral Sciences, 2001-02.

Fellow of the American Academy of Arts and Sciences, elected 1997.

Fellow of the Econometric Society, elected 1991.

ACCF Center for Policy Research Fellowship, 1994.

Alfred P. Sloan Foundation Research Fellow, 1987-1989.

NBER-Olin Research Fellow, 1985-1986.

Awarded Hoover National Fellowship, 1985-1986 (declined to accept NBER-Olin).

National Science Foundation Graduate Fellowship, 1979-1982.

John H. Williams Prize, 1979 (first ranked graduate in Economics).

A.B. conferred Summa Cum Laude, 1979.

Edward Whitaker Memorial Scholarship, 1978 (outstanding public speaker of college class).

Phi Beta Kappa, 1978.

College Freshman National Debate Champion, 1976.

Teaching

Microeconomic Theory, Ph.D. level (Stanford and Princeton).

Public Finance, Ph.D. level (Stanford, Northwestern, and Princeton).

Industrial Organization, Ph.D. level (Princeton).

Insurance and Risk Management, Masters level (Northwestern).

Principles of Economics, undergraduate level (Stanford)

Intermediate Microeconomics, undergraduate level (Stanford).

Public Finance, undergraduate level (Stanford).

Professional Activities

Research Affiliations

Research Associate, National Bureau of Economic Research, 1986-present (Faculty Research Fellow from 1984 to 1986).

Senior Fellow of the Stanford Institute for Economic Policy Research, 1998-present.

Director, Stanford Institute for Theoretical Economics, 2001-2003.

Co-Director, Tax and Budget Policy Program, Center for Economic Policy Research at Stanford University, 1997-2002.

Co-Director, Center for Economic Policy Studies at Princeton University, 1993-1994.

Visiting Scholar, Federal Reserve Bank of Philadelphia, September 1991-August 1992.

Editorial Boards

American Economic Review (co-editor, 2002-present).

Journal of Public Economics (associate editor, 1998-2002).

Journal of Financial Intermediation (co-editor, 1989-1993)

Econometrica (associate editor 1987-1990)

Quarterly Journal of Economics (associate editor, 1984-1990)

Organization of Conferences and Meetings

Organizer, CEPS/Princeton University Conference on Retirement Savings and Security, to be held in March 2002.

Organizer, CEPR/Stanford University Conference on Fundamental Tax Reform, December 1, 1995.

Co-organizer, NBER Conference on Saving, January 6-7, 1989.

Organizer, NBER Universities Research Conference on Social Insurance, April 28-29, 1989.

Chairman, Program Committee for the 1989 Winter Meeting of the Econometric Society.

Member, Econometric Society Program Committees: 1986 Winter Meeting, 1989 Summer Meeting, 1990 World Congress.

Other Service for Professional Organizations

Member, Frisch Medal Selection Committee, Econometric Society, 2001-2002.

Member of the Nominating Panel, American Academy of Arts and Sciences (Class III, Section 2 - Economics), 2000.

Steering Committee, Economics Training Initiative, Social Science Research Council, 1997-2000.

Steering Committee, Stanford Institute for Economic Policy Research, 1994-present.

Member, Board of Directors, American Council for Capital Formation, Center for Policy Research, 1993-present.

Member of the Panel on Social Security Privatization, National Academy of Social Insurance, and Chair of the Income Sub-Panel, 1997-1998.

Advisory Board Member, Americans United to Save Social Security, 1997.

Member, Board of Directors, Commission on Savings and Investment in America, 1993-1996.

Member, Finance Committee, American Economics Association, 1989-1990.

Publications

Research Papers in Academic Journals

"The Power of the Last Word in Legislative Policy Making," *Econometrica*, forthcoming (with Antonio Rangel and Luis Rayo).

"Memory and Anticipation," *Economic Journal*, forthcoming, April 2005 (with Raphael Thomadsen).

"How Do Residents Manage Personal Finances?" *American Journal of Surgery*, forthcoming (with Joel Teichman, Eric Espanoza, Patricia Cecconi, Neva Kerbeshian, Maraget Pearle, Glenn Preminger, and Raymond Leveille).

"Addiction and Cue-Triggered Decision Processes," *American Economic Review*, December 2004 (with Antonio Rangel).

"Do Estate and Gift Taxes Affect the Timing of Private Transfers?" *Journal of Public Economics*, 88(12), December 2004, 2617-2634 (with Robert Lemke and John Karl Scholz).

"Are Life Insurance Holdings Related to Financial Vulnerabilities?" *Economic Inquiry* 41(4), October 2003, 531-54 (with Katherine Carman, Jagadeesh Gokhale, and Laurence Kotlikoff).

"Bequests as Signals: An Explanation for the Equal Division Puzzle," *Journal of Political Economy* 111(4), August 2003, 733-764 (with Sergei Severinov).

"The Mismatch Between Life Insurance and Financial Vulnerabilities: Evidence from the Health and Retirement Survey," *American Economic Review* 93(1), March 2003, 354-365 (with Lorenzo Forni, Jagadeesh Gokhale, and Laurence Kotlikoff).

"The Effects of Financial Education in the Workplace: Evidence from a Survey of Households," *Journal of Public Economics* 87(7-8), August 2003, 1487-1519 (with Daniel M. Garrett).

"Optimal Money Burning: Theory and Application to Corporate Dividend Policy," *Journal of Economics and Management Science* 10(4), Winter 2001, 463-507 (with Lee Redding).

"What Accounts for the Variation in Retirement Saving Across U.S. Households?" *American Economic Review*, 91(4), September 2001, 832-857 (with Jonathan Skinner and Steven Weinberg).

"How Do Urology Residents Manage Personal Finances?" *Urology*, 57(5), 2001, 866-871 (with Joel Teichman, Eric Espinosa, Patricia Parker, Joana Meyer, Margaret Pearle, Glenn Preminger, and Raymond Leveille).

"Education and Saving: The Long-Term Effects of High School Financial Curriculum Mandates," *Journal of Public Economics*, 80(3), June 2001, 435-465 (with Daniel M. Garrett and Dean Maki).

"How Much Should Americans be Saving for Retirement?" *American Economic Review Papers and Proceedings*, 90(2), May 2000, 288-292.

- "Rational Strategic Choice Revisited," *Scandinavian Journal of Economics*, 100(2), 1998, 537-541.
- "Incomplete Contracts and Strategic Ambiguity," *American Economic Review*, 88(4), September 1998, 902-932 (with Michael Whinston).
- "Exclusive Dealing," *Journal of Political Economy*, 106(1), February 1998, 64-103 (with Michael Whinston).
- "Veblen Effects in a Theory of Conspicuous Consumption," *American Economic Review*, 86(3), June 1996, 349-373 (with Laurie Simon Bagwell).
- "Repeated Games with Asymptotically Finite Horizons," *Journal of Economic Theory*, 67(1), October 1995, 129-152 (with Aniruddha Dasgupta).
- "A Tax-Based Test of the Dividend Signaling Hypothesis," *American Economic Review*, 85(3), June 1995, 532-551 (with Adam Wantz).
- "A Theory of Conformity," *Journal of Political Economy* 102(5), October 1994, 841-877.
- "Private Saving and Public Policy," *Tax Policy and the Economy* 7, 1993, 73-110 (with J. Karl Scholz).
- "Tax Policy and the Dividend Puzzle," *Rand Journal of Economics* 22 (4), Winter 1991, 455-476.
- "Fiscal Policy with Impure Intergenerational Altruism," *Econometrica* 59 (6), November 1991, 1687-1712 (with Andrew Abel).
- "How Strong are Bequest Motives? Evidence Based on Estimates of the Demand for Life Insurance and Annuities," *Journal of Political Economy* 99 (5), October 1991, 899-927.
- "Multimarket Contact and Collusive Behavior," *Rand Journal of Economics* 21 (1), Spring 1990, 1-26 (with Michael Whinston).
- Reprinted in L. Cabral (ed.), *Readings in Industrial Organization*, Oxford: Blackwell, 2000, 71-102.
- Reprinted in S. Salant and M. Levenstein (eds.), *Cartels*, forthcoming.
- "Collective Dynamic Consistency in Repeated Games," *Games and Economic Behavior* 1 (4), December 1989, 295-326 (with Debraj Ray).
- "Social Security and Saving: An Analysis of Expectations," *American Economic Review, Papers and Proceedings* 79, May 1989, 97-102 (with Lawrence Levin).
- "Incentive Effects of the Corporate Alternative Minimum Tax," *Tax Policy and the Economy* 3, 1989, 69-96.
- "A Neoclassical Perspective on Budget Deficits," *Journal of Economic Perspectives* 3, Spring 1989, 55-72.

Reprinted in G. Wood and L. Kaounides (eds.), *Debt and Deficits, Vol. 3: Debt Neutrality and the Theory of Fiscal Policy, 1970s to 1990s*, Edward Elgar Publishing Ltd.: London, 1992, 431-48.

Translated into Italian and reprinted in G. Eusepi (ed.), *Rassegna di lavori dell' ISCO*, ISCO: Rome, 1993.

"Markov Perfect Equilibria in Altruistic Growth Economies with Production Uncertainty," *Journal of Economic Theory* 47, February 1989, 195-202 (with Debraj Ray).

"Intergenerational Altruism, Dynastic Equilibria and Social Welfare," *Review of Economic Studies* 56, January 1989, 119-128.

"Comparable Worth in a General Equilibrium Model of the U.S. Economy," *Research in Labor Economics* 9, 1988, 1-52 (with Perry Beider, Victor Fuchs, and John Shoven).

"Altruism within the Family Reconsidered: Do Nice Guys Finish Last?" *American Economic Review* 78, December 1988, 1034-1045 (with Oded Stark).

Reprinted in Steven Zamagni (ed.), *The Economics of Altruism*, Edward Elgar Publishing Ltd: London, 1993.

"Budget Deficits and the Balance of Trade," *Tax Policy and the Economy* 2, 1988, 1-32.

"Is Everything Neutral?" *Journal of Political Economy* 96 (2), 1988, 308-338 (with Kyle Bagwell).

Reprinted in K.D. Hoover (ed.), *The New Classical Macroeconomics*, Edward Elgar Publishing Ltd: London, 1992, 166-207.

"Ricardian Equivalence: An Evaluation of Theory and Evidence," *NBER Macro Annual* 2, 1987, 263-304.

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"Does the Estate Tax Raise Revenue?" *Tax Policy and the Economy* 1, 1987, 113-138.

Reprinted in P. Caron, K. Burke and G. McCouch (eds.), *Federal Transfer Tax Anthology*, Anderson Publishing Company, 1998.

"Economic Growth with Intergenerational Altruism," *Review of Economic Studies* 54 (2), April 1987, 227-242 (with Debraj Ray).

"Coalition Proof Nash Equilibria I: Concepts," *Journal of Economic Theory* 42 (1), June 1987, 1-12 (with Bezalel Peleg and Michael Whinston).

"Coalition Proof Nash Equilibria II: Applications," *Journal of Economic Theory* 42 (1), June 1987, 13-29 (with Michael Whinston).

"Axiomatic Characterizations of Rational Choice in Strategic Environments," *Scandinavian Journal of Economics* 88 (3), 1986, 473-488.

"On the Existence of Markov-Consistent Plans Under Production Uncertainty," *Review of Economic Studies* 53 (5), October 1986, 877-882 (with Debraj Ray).

"On the Voluntary and Involuntary Provision of Public Goods," *American Economic Review* 76 (4), September 1986, 789-793.

"Common Agency," *Econometrica* 54 (4), July 1986, 923-942 (with Michael Whinston).

"Menu Auctions, Resource Allocation, and Economic Influence," *Quarterly Journal of Economics* 101 (1), February 1986, 1-31 (with Michael Whinston).

"Common Marketing Agency as a Device for Facilitating Collusion," *Rand Journal of Economics* 16 (2), Summer 1985, 269-281 (with Michael Whinston).

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"The Strategic Bequest Motive," *Journal of Political Economy* 93 (6), December 1985, 1045-1076 (with Andrei Shleifer and Lawrence Summers).

Reprinted in Nancy Folbre (ed.), *The Economics of the Family*, International Library of Critical Writings in Economics, Edward Elgar, 1996.

"Rationalizable Strategic Behavior," *Econometrica* 52 (4), July 1984, 1007-1028.

Reprinted in Eric Maskin (ed.), *Recent Developments in Game Theory*, International Library of Critical Writings in Economics, Edward Elgar, 1999.

"Strategic Deterrence of Sequential Entry into an Industry," *Rand Journal of Economics* 15 (1), Spring 1984, 1-11.

"A Note on Dynamic Tax Incidence," *Quarterly Journal of Economics* 96 (4), November 1981, 705-23.

Reprinted in Don Fullerton and Gilbert Metcalf (eds.), *The Distribution of Tax Burdens*, International Library of Critical Writings in Economics, Edward Elgar, forthcoming.

Research Papers Published in Books and Conference Volumes

"An Economic Approach to Setting Retirement Saving Goals," in Olivia Mitchell, Zvi Bodie, Brett Hammond, and Steven Zeldes (eds.), *Innovations in Financing Retirement*, University of Pennsylvania Press, Pension Research Council, the Wharton School, University of Pennsylvania, 2002, pp. 77-105 (with Lorenzo Forni, Jagadeesh Gokhale, and Laurence Kotlikoff).

"Taxation and Saving," in Alan Auerbach and Martin Feldstein (eds.), *Handbook of Public Economics*, Volume 3, North-Holland, 2002, 1173-1249.

"Financial Illiteracy, Education, and Retirement Saving," in Olivia S. Mitchell and Sylvester J. Schieber (eds.), *Living with Defined Contribution Pensions*, University of Pennsylvania Press, Pension Research Council, the Wharton School, University of Pennsylvania, 1998, 38-68.

"Taxation and Saving: A Behavioral Perspective," *1996 Proceedings of the Eighty-Ninth Annual Conference on Taxation*, National Tax Association, Washington, DC, 1997, 28-36.

"The Adequacy of Personal Retirement Saving: Issues and Options," in David Wise (ed.), *Facing the Age Wave*, Hoover Institution Press: Stanford, CA, 1997, 30-56.

"Rethinking Saving Incentives," in A. Auerbach (ed.), *Fiscal Policy: Lessons From Economic Research*, MIT Press: Cambridge, MA, 1997, 259-311.

"Do Households Appreciate Their Financial Vulnerabilities? An Analysis of Actions, Perceptions, and Public Policy," *Tax Policy and Economic Growth*, Washington, DC: American Council for Capital Formation, 1995, 1-30.

"Personal Saving, Information, and Economic Literacy: New Directions for Public Policy," in *Tax Policy for Economic Growth in the 1990s*, Washington, DC: American Council for Capital Formation, 1994, 53-78.

"Comparing the Cost of Capital in the United States and Japan," in N. Rosenberg, R. Landau, and D. Mowery (eds.), *Technology and the Wealth of Nations*, Stanford University Press: Stanford, CA, 1992, 151-174.

"Consumption Taxation in a General Equilibrium Model: How Reliable are Simulation Results?" in B.D. Bernheim and J.B. Shoven (eds.), *National Saving and Economic Performance*, NBER-University of Chicago Press: Chicago, 1991, 131-158 (with J. Karl Scholz and John Shoven).

"How do the Elderly Form Expectations? An Analysis of Responses to New Information," in D. Wise (ed.), *Issues in the Economics of Aging*, NBER-University of Chicago Press: Chicago, 1990, 259-283.

"The Crisis in Deposit Insurance: Issues and Options," in S. Greenbaum (ed.), *Capital Issues in Banking*, Association of Reserve City Bankers, 1989, 160-197.

"The Timing of Retirement: A Comparison of Expectations and Realizations," in D. Wise (ed.), *The Economics of Aging*, NBER-University of Chicago Press: Chicago, 1989, 335-355.

"Social Security Benefits: An Empirical Study of Expectations and Realizations," in E. Lazear and R. Ricardo-Campbell (eds.), *Issues in Contemporary Retirement*, Hoover Institution Press: Stanford, 1988, 312-345.

"Pension Funding and Saving," in Z. Bodie, J. Shoven and D. Wise (eds.), *Pensions in the U.S. Economy*, NBER-University of Chicago Press: Chicago, 1988, 85-111 (with John Shoven).

Reprinted in Maria O'Brien Hylton (ed.), *Cases and Materials on Employee Benefits Law*, West Publishing Company.

"Taxation and the Cost of Capital: An International Comparison," in Walker and Bloomfield (eds.), *The Consumption Tax: A Better Alternative?* Ballinger Publishing Co., 1987 (with John Shoven).

Translated into French and reprinted in *Annales d'Economie et de Statistique* 11, 1988, 93-116.

"Dissaving After Retirement: Testing the Pure Life Cycle Hypothesis," in Z. Bodie, J. Shoven and D. Wise (eds.), *Issues in Pension Economics*, NBER-University of Chicago Press: Chicago, 1987, 237-282.

Reviews and Comments

Comment on papers by Robert Barro, Robert Hall, and Chad Jones, in M. Boskin (ed.), *Alternative Approaches to Economic Growth*, Hoover Press, forthcoming, 1999.

Comment on "Family Bargaining and Retirement Behavior," in Henry Aaron (ed.), *Behavioral Economics and Retirement Policy*, Brookings Institution, Press, 1999, 273-281.

Comment on "Measuring Poverty Among the Elderly," in David A. Wise (ed.), *Inquiries in the Economics of Aging*, NBER-University of Chicago Press, 1998, 200-204.

Comment on "The Effects of Fundamental Tax Reform on Saving," in Henry J. Aaron and William G. Gale (eds.), *Economic Effects of Fundamental Tax Reform*, Brookings Institution: Washington, D.C., 1996, 112-117.

Comment on "Do Saving Incentives Work?" *Brookings Papers on Economic Activity* (1), 1994, 152-166.

Comment on "401(k) Plans and Tax Deferred Saving" and "Some Thoughts on Saving," in D. Wise (ed.), *Studies in the Economics of Aging*, NBER-University of Chicago Press, 1994, 171-179.

Comment on "Repackaging Ownership Rights and Multinational Taxation: The Case of Withholding Taxes," *Journal of Accounting, Auditing and Finance* 6 (4), Fall 1991, 533-536.

Comment on "Optimal Fiscal and Monetary Policy: Some Recent Results," *Journal of Money, Credit, and Banking* 23 (3), August 1991, 540-542.

"Pondering Pensions," review of *Pensions, Economics, and Public Policy*, by Richard Ippolito, *Regulation*, November/December 1986, 53-55.

Books

Anticompetitive Exclusion and Foreclosure through Vertical Agreements, CORE Lecture Series, Center for Operations Research and Econometrics, Université Catholique de Louvain, 1999 (with Michael Whinston).

National Saving and Economic Performance, NBER-University of Chicago Press: Chicago, 1991 (co-editor, with J.B. Shoven).

The Vanishing Nest Egg: Reflections on Saving in America, Twentieth Century Fund/Priority Press: New York, 1991.

Editorials

"A country without a nest egg," *Los Angeles Herald Examiner*, October 25, 1987, F1-F4.

"Despite recent fixes, social security still faces day of reckoning," *Los Angeles Herald Examiner*, August 9, 1987, F3-F6.

"The wages of haste in the comparable worth debate," *Los Angeles Herald Examiner*, June 28, 1987, F1-F4.

"Are the deficit worries overblown?" *Los Angeles Herald Examiner*, April 12, 1987, F1-F4.

"Tax reform will force California to rethink goals," *Los Angeles Herald Examiner*, January 11, 1987, F1-F4.

"Boesky affair no reason to pass new laws," *Los Angeles Herald Examiner*, December 7, 1986, F1-F4.

"Congress has painted itself into a corner with tax reform," *Los Angeles Herald Examiner*, September 4, 1986, F1-F4.

Other Publications

"Taxes and Saving," in J. J. Cordes, R. D. Ebel, and J. G. Gravelle (eds.), *Encyclopedia of Taxation and Tax Policy*, Urban Institute Press: Washington D.C., 1999.

The Economic Role of Annuities, Catalyst Institute, 1998 (with Patrick J. Bayer and Michael J. Boskin).

"Who Will Pay for Retirement in the 21st Century," *NAVA Outlook*, May/June 1995, 4(3), 1-3.

"The Adequacy of Saving for Retirement and the Role of Economic Literacy," *Retirement in the 21st Century: Ready or Not?* Employee Benefit Research Institute, 1994, 73-81.

"Do Americans Save Too Little?" *Federal Reserve Bank of Philadelphia Business Review*, September/October 1993, 3-20 (with J. Karl Scholz).

Is the Baby Boom Generation Saving Adequately for Retirement? Summary Report, New York: Merrill Lynch, Pierce, Fenner & Smith Inc., January 1993, with updates for 1994, 1995, and 1996, and 1997.

"Premium Saving Accounts: A Proposal to Improve Tax Incentives for Saving," *LaFollette Policy Report* 5(1), Fall 1992, 1-2, 22-23.

Unpublished Research Papers

"A Solution Concept for Majority Rule in Dynamic Settings," revised September 2004, submitted to *Review of Economic Studies* (with Sita Nataraj).

"Self-Enforcing Cooperation with Graduated Punishments," July 2004 (with Dilip Abreu and Avinash Dixit).

"Special Interest Politics and the Quality of Governance," June 2004 (with Navin Kartik).

"Income Redistribution with Majoritarian Politics," May 2004 (with Sita Nataraj).

"Self Control, Saving, and the Low Asset Trap," mimeo, Stanford University, May 1999 (with Debraj Ray and Sevin Yeltekin).

"The Effects of Financial Education in the Workplace: Evidence from a Survey of Employers," mimeo, Stanford University, June 1996 (with Patrick Bayer and John Karl Scholz).

Work in Progress

"Cheating within Imperfect Cartels"

"Saving and Cue-Triggered Decision Processes" (with Antonio Rangel).

"Social Image and the 50-50 Norm: Theory and Experimental Evidence" (with James Andreoni).

"Memory and Re-experience Utility" (with Peter Coles).

"Power and Predictability in Legislative Bargaining"

"The Effects of Marital Status Transitions on Living Standards" (with Laurence Kotlikoff, Katherine Carman, and Neva Kerbeshian).

"Is Alcohol Consumption Impulsive? Evidence on the Effects of 'Blue Laws'" (with Neva Kerbeshian and Jonathan Meer).

"Multidirectional Signaling" (with Sergei Severinov).

Research Grants

"Theoretical Investigations of Some Empirical Puzzles Regarding Behavior in Relationships with Asymmetric Information," National Science Foundation, recommended for funding, December 2004 (with Avinash Dixit).

"Legislative Fiscal Policy Making with Reconsideration," National Science Foundation, June 2002 through May 2005.

"The Adequacy of Saving and Life Insurance - A Unique Case Study," National Institute on Aging, June 1999 through June 2002.

"The Adequacy of Saving and Insurance of Americans Approaching Retirement," National Institute on Aging, June 1997 through June 2000.

"Economic Literacy, Education, and Financial Behavior," National Science Foundation, July 1995 through July 1997 (co-sponsorship with Smith Richardson Foundation).

"Economic Literacy, Education, and Personal Saving," Smith Richardson Foundation, June 1995 through June 1997 (co-sponsorship with National Science Foundation).

"Behavioral Determinants of Household Financial Decisions," National Science Foundation, August 1994 through December 1995.

"Informational Imperfections and Economic Behavior," National Science Foundation, July 1991 through December 1993 (with Michael Whinston).

"Dividends and Corporate Financial Policy," National Science Foundation, July 1989 through December 1991 (with Laurie Bagwell).

"The Risk Adjusted Cost of Capital: An International and Intertemporal Comparison," Center for Economic Policy Research at Stanford University, June 1988 through June 1989.

"The Importance and Accuracy of Expectations," part of the NBER's project on the Economics of Aging, National Institute on Aging, December 1986 through December 1988.

"Understanding Intergenerational Transfers," National Science Foundation, August 1986 through July 1988.

"Comparable Worth," Center for Economic Policy Research at Stanford University, January 1986 through December 1986.

"The Roles of Risk and Insurance in Alternative Models of Personal Wealth Accumulation," Center for Economic Policy Research at Stanford University, January 1985 through January 1986.

"Planning Games," National Science Foundation, July 1984 through December 1986 (with Debraj Ray).

"Pension Annuities and Private Wealth Reconsidered," Center for Economic Policy Research at Stanford University, June 1983 through June 1984.

Ph.D. Dissertation Committees (Completed)

Abe, Yukiko
Anand, Bharat
Bagwell, Laurie
Bayer, Patrick
Besharov, Gregory
Borzekowski, Ronald
Bubna, Amit
Buiter, Perry
Cai, Hongbin
Calleja Alderete, Jaime
Carman, Katherine
Corts, Kenneth
Dasgupta, Aniruddha
Dinc, Serdar
Eisenberg, Daniel
Facchini, Giovanni
Fluck, Zsuzsanna
Gale, William
Garrett, Daniel
Graddy, Kathryn

Hege, Ulrich
Kanazawa, Mark
Kartik, Navin
Levenson, Alec
Levin, Laurence
Lindsey, Laura
Mathai, Koshy
Medina, Luis
Miller, Amalia
Nataraj, Sita
Navarro, Neva
Neher, Darwin
Nichols, Donald
O'Neill, Chanel
O'Reilly, Terrence
Ozler, Sule
Pasha, Hafiz
Rayo, Luis
Redding, Lee
Rork, Jonathan

Severinov, Sergei
Scholz, John Karl
Sen, Arijit
Sialm, Clemens
Smart, Michael
Stotsky, Janet
Tao, Zhigang
Thomadsen, Raphael
Van der Taak, Steven
Weinberg, Steven
Williams, Michael
Williams, Robertson
Wolff, Raymond
Yasuda, Ayako
Zhang, Lei
Zhou, Li-An
Zucker, John

Current Ph.D. Students

Ahoobim, Oren
Ali, Nageeb
Arias, Luz Marina
Console Battilana, Silvia

Geyer, Francisca
Hatfield, John
Henry, Emeric
Ho, Benjamin

Meer, Jonathan
Nicholson, Scott
Van Wesep, Edward
Zheng, Wentong

RECENT TESTIMONY AND CERTAIN DECLARATIONS

- *In re Vitamins Antitrust Litigation*, US District Court for the District of Columbia, deposition taken August 5-8, 2002; hearing testimony March 20, 2003; trial testimony June 2, 2003.
- *Amgen, Inc. vs. Ortho Pharmaceutical Corp.*, Endispute Arbitration, Chicago Illinois, The Honorable Frank J. McGarr, arbitrator, deposition taken November 30, 2001; hearing testimony May 15, 2002.
- *Highmark, Inc., et al. v. UPMC Health System*, civil Action No. 01-1114, US District Court for the Western District of Pennsylvania, deposition taken October 18, 2001.
- *In the Matter of Application by Bell Atlantic New York for Authorization Under Section 271 of the Communications Act to Provide In-Region, Interlata Service in the State of New York* (FCC 99-295, FCC 99-404), declaration.
- *Paper Systems, Inc. et al. vs. Mitsubishi et al.*, US District Court for the Northern District of California, deposition taken September 2-3, 1998.
- *In the Applications of Nynex Corporation, Transferor, and Bell Atlantic Corporation, Transferee* (FCC 97-286), declaration.
- *In the Matter of Motion of AT&T Corporation to be Reclassified as a Non-Dominant Carrier* (FCC 95-427), declaration.
- *In re Applications of Craig O. McCaw, Transferor, and American Telephone and Telegraph Company, Transferee* (FCC 94-238), declaration.